9 Implementation

The MDC Division of Watershed Management budget and staffing levels increased significantly from 1986 to 1998, including a period of severe reductions in both financial and staff resources during the Commonwealth's fiscal crisis of 1991-1994. After reaching a peak in budget and staff in 2000, there has been a steady reduction in financial and staffing resources. The Bureau of Watershed Management currently has 123 employees, including 57 professionals. This cadre of environmental professionals, supplemented by judicious use of consultants, has enabled BWM to maintain its excellent record of protecting the watershed system.

BWM is continually reexamining its priorities and capabilities in response to shifting resource levels. Fluctuations in watershed operations personnel have been affected by changes in the science and practice of watershed maintenance (e.g., shoreline mowing, cutting, access, aquatic mammal control) and the availability of mechanical equipment for operations previously done by manual labor. Irrespective of changes to financial and staff resource, BWM has continually been responsive to those operations and programs most directly impacting reservoir water quality and the delivery of water to the MWRA system that meets the water quality criteria specified in the Surface Water Treatment Rule.

Sections 9.1 and 9.2 respectively describe the organization and budget of the entire Division of Watershed Management. The Action Plan presented in Section 9.3 is exclusive to the Wachusett Reservoir Watershed.

9.1 Organization and Staff

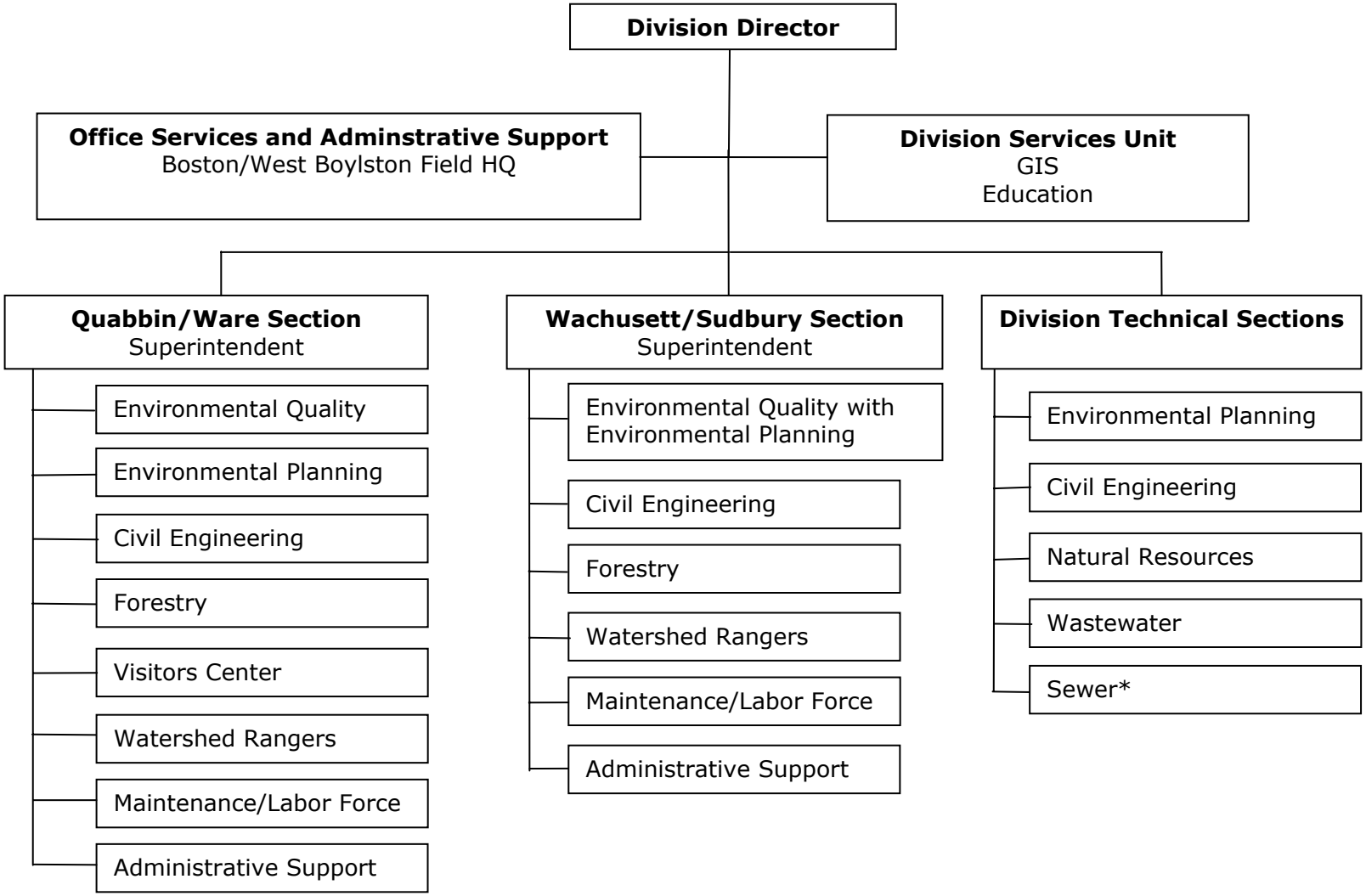
9.1.1 BWM Organization

The BWM currently employs 123 staff who perform a variety of duties in locations which range over 100 miles, from Boston west through the Wachusett Reservoir and Ware River watersheds out to the Quabbin Reservoir watershed. BWM staff include engineers, planners, wildlife biologists, aquatic biologists, foresters, bacteriologists, rangers, education specialists, skilled tradesmen, administrative assistants, accountants, bookkeepers, laborers and other skilled positions.

Figure 9-1 shows the BWM organization chart. Staff within BWM are organized into Administration, including service units that support the entire Bureau; the Division Technical Section, providing policy and planning support; and the field-based Quabbin/Ware Operations Section and Wachusett/Sudbury Operations Section. Within this structure, there are six core programs:

- Environmental Quality (EQ)
- Environmental Planning (EP)
- Civil Engineering (CE)
- Natural Resources (NR)
- Forestry
- Rangers

Figure 9-1: Bureau of Watershed Management Organization, FY04-FY08



* Includes five bond-funded, construction duration positions.

The EQ, EP, and CE programs are represented at both the BWM policy level and in the Operations Sections. The NR program is BWM level only, conducting land management and public access planning. The Forestry and Ranger programs are organized in the Operations Sections; staff in these programs coordinate extensively with BWM-level functions (EQ, EP, NR). The functions and activities of each unit are described in the following sections, as well as staff qualifications and training, as required by DEP Measures of Success. All field staff have been trained in the implementation of the Standard Operating Procedures (SOPs), established by the Bureau and approved by DEP, on subjects such as Building Demolition, Vegetative Waste Management, Vehicle Waste Disposal, and Illegal Dumping.

9.1.2 Administration

The Administration Section is responsible for specific support including procurement, contracting, and human resources, to all other BWM activities and sections. The Administration Section coordinates communication with all other DCR Divisions and departments (e.g., Human Resources, Payroll, Finance, Contract Administration, Labor Relations, Public Information, Commissioner's Office, Legislative Liaison, Office of General Counsel). The administration section is also responsible for coordination with other state, regional, and federal agencies.

There are two principal subunits within the Administration Section: the Office Services and Support Unit and the Division Services Unit. Office Services and Support represents primarily finance and office management staff, bookkeepers, clerks, and contract support. The Division Services Unit provides technical services to BWM staff and includes GIS and other MIS support functions (**see Section 8.3**), educational program support, and planning coordination.

9.1.3 Wachusett/Sudbury Operations and Quabbin/Ware Operations

The watershed system is managed at the field level within two major operations sections: the Wachusett/Sudbury Section and the Quabbin/Ware Section, each managed by the section Superintendent. Watershed operations sections embrace a multitude of functions throughout the watershed system. The operations section include staff representing the EQ, EP, and CE sections, as well as Forestry, Watershed Rangers, and labor crews. The operations labor forces include skilled laborers, skilled tradesman (carpenters, painters, welders, etc.), motor vehicle mechanics, heavy equipment operators, and requisite supervisory foremen and subforemen positions. Generally, the labor force is organized into crews with specific regional- and functional-assigned responsibilities.

The Wachusett/Sudbury and the Quabbin/Ware Operations Sections maintenance crews are responsible for:

- Participating in the bird harassment program, under the direction of EQ.
- Maintaining BWM facilities and equipment including:
  - fire roads
  - other roads and culverts

- buildings
- grass cutting and related grounds keeping on dams and shorelines
- vehicle fleet and heavy equipment
- signs.

- Completing construction projects, such as erosion control BMPs.

- Providing field support and assistance to other sections in the performance and maintenance of field projects.

Qualifications and Training

Training for operations staff includes implementation of Standard Operating Procedures, emergency boom deployment, boat safety, water safety (e.g., cold water rescue and survival), emergency response, fire suppression, bird harassment techniques, and erosion control practices.

9.1.4 Environmental Quality

Environmental Quality (EQ) is responsible for several major activities, such as remediation of pollution sources, monitoring, research, and technical review:

- Monitoring: EQ staff conduct all water quality monitoring of reservoirs and tributaries, including sampling and data analysis for NR, CE, and EP sections. Tasks range from sample collection, operation of analytical laboratories, and Environmental Quality Assessments (EQAs).

- Remediation: EQ staff oversee the gull harassment program, coordinate hazardous materials release responses, and employ BMPs to prevent, treat, and mitigate impacts of pollutants.

- Research: EQ is responsible for researching the sources, mobilization, transport, and fate of pollutants of concern to the water supply and the watershed system.

- Technical Review: EQ staff coordinate with local boards and commissions regarding enforcement of environmental regulations (e.g., Title 5, Wetlands Protection Act, Rivers Protection Act, WsPA, MEPA), conduct review of environmental impacts of proposed projects within watershed communities, and communicate with other state, federal and local agencies on a wide range of environmental matters of concern.

EQ staff represent the Bureau on a number of interagency committees, such as the Pathogen Control Working Group, Algae Task Force, and similar informal water quality and modeling science working groups. EQ has primary responsibility for the Bird Harassment Program (which is staffed by Operations Section labor and professional personnel under EQ direction).

EQ staff are responsible for maintaining water quality laboratories at the Bureau's Quabbin and Wachusett Reservoir field offices. The section is also responsible for securing and maintaining

contracts with qualified laboratories that perform analyses that cannot be conducted with BWM in-house capabilities. The MWRA and EQ routinely exchange data. EQ publishes reports on annual water quality, EQAs, and other water quality and environmental assessments (**see Section 5**).

Qualifications and Training

EQ staff hold degrees in environmental engineering, civil engineering, environmental science, biology, chemistry, and bacteriology. Four EQ staff are registered Professional Engineers. To remain current with emerging issues, staff participate in a wide variety of professional organizations and participate in conferences and training events. These include:

- Membership in American Water Works Association (AWWA), American Society of Civil Engineers, North American Lake Management Society (NALMS), New England Association of Environmental Biologists.

- Attendance at DEP training courses for Title 5, Rivers Protection Act, and Stormwater BMPs. All staff who review on-site wastewater disposal have received soil inspector and system inspector certifications.

- Participation in conferences sponsored by professional organizations on topics such as watershed protection practices, water quality testing methods, *Cryptosporidium*, erosion control practices, and BMPs for agriculture.

9.1.5 Environmental Planning

Environmental Planning (EP) was re-established in the Bureau in 1992, primarily in response to the additional administrative responsibilities placed on the Bureau pursuant to the passage of the Watershed Protection Act (WsPA; **see Section 5.2.1**). The section is primarily responsible for the administration and enforcement of the rules and regulations promulgated to regulate land use and development within the primary protection and secondary protection zones created by WsPA throughout the watershed system. The EP Section is also responsible for coordinating technical assistance to watershed communities with respect to planning, zoning, subdivision, and health bylaws specifically directed by WsPA. Due to the integrated nature of WsPA administration and other monitoring activities, the EP section at Wachusett/Sudbury has been integrated into the EQ section.

Qualifications and Training

All EP staff in the have degrees in planning or urban studies/affairs and have graduate degrees in planning and related fields. Staff are members of several professional organizations, including the American Planning Association (APA) and the American Institute of Certified Planners (AICP).

EP staff participate in training activities to stay informed about emerging issues relative to watershed protection. These include attending DEP training for stormwater, APA conferences, and Citizens Training Workshops.

9.1.6 Civil Engineering

Civil Engineering (CE) is responsible for the inspection, maintenance, repair, reconstruction, and analysis of all dams and appurtenant facilities, bridges, roads, and buildings under BWM's care and control. These facilities include 12 major water supply dams and related hydraulic structure, 14 bridges and 419 miles of roads and fire roads, and 65 individual buildings and facilities. In addition to the facilities themselves, such ancillary systems as water supply, wastewater disposal, heating and cooling, structural analysis, roofing, and historical preservation must be monitored and incorporated into the section's activities. The Engineering Section also is responsible for construction contract review and administration on major construction projects at BWM watershed facilities (**see Section 7.1**).

CE is responsible for maintaining and administering Emergency Action Plans (EAPs) pursuant to Federal Emergency Regulatory Commission (FERC) and MEMA requirements based on the classification of most of the water supply dams in this system as "large, high hazard" structures. This effort includes regular engagement of independent engineering structural evaluations; preparation and communication of Emergency Action Plans to federal, state, and local emergency agencies; and the conduct of standard telephone and operational drills of the EAPs at all facilities.

Qualifications and Training

Staff in the Civil Engineering Section hold degrees in civil engineering. Staff attend workshops and conferences on dam safety and other engineering subjects.

9.1.7 Natural Resources

Natural Resources (NR) is responsible for managing natural resources associated with BWM-owned watershed land and providing technical assistance to non-BWM landowners. Major activities within this section include coordinating forestry and land management plans (although the Operations Sections are responsible for conducting forestry management activities), wildlife management, developing plans and policies for public use and access to BWM lands and waters in the watershed, acquiring additional watershed lands considered critical for protection of the water supply, annual inspections of Conservation Restrictions held by the Bureau, and monitoring against encroachments and trespass on BWM lands (**see Section 4**).

NR conducts extensive research covering a broad range of issues related to the management and stewardship of forestry and wildlife resources, habitat management, ecosystem management, and biodiversity. This section also holds primary responsibility for the stewardship of historic and archaeological resources within the care and control of the Bureau.

Qualifications and Training

NR staff have degrees in forestry, wildlife biology, planning, landscape architecture, and civil engineering. Staff belong to many professional organizations including Society of American Foresters and the Wildlife Society. In addition to this, some staff are certified as foresters, arborists, and wildlife biologists. NR staff have attended conferences and professional training on such topics

as wetlands mapping, forest inventory methods, and identification and protection of rare species. NR hosts an annual symposium on forest management and watershed protection at the Quabbin Reservoir with 30 - 40 experts in the field, sponsored an international conference on watershed forest management in 1998, and attend the annual conference of the Northeast Association of Watershed Forest Managers.

9.1.8 Forestry

Each Operations Section is staffed by professional foresters. The Forestry staff is responsible for the annual planning, implementation, field oversight, and management of all forestry activity. In addition, foresters conduct field assessments and inventories of BWM forests and newly acquired lands, and contribute significantly to the development of long-term forest management plans. The NR Section coordinates a private lands stewardship program, through which private forest landowners are reimbursed for the cost of producing a 10-year forest management plan that qualifies them for Chapter 61 and/or Stewardship programs, including incentive practices.

Qualifications and Training

BWM Foresters have degrees in forestry; and many are members of the Massachusetts Association of Professional Foresters and the Society of American Foresters. Foresters regularly attend conferences and professional training sessions on such topics as: forest health, biodiversity, wildlife management, wildland firefighting and prescribed burning, and identification and protection of rare species.

9.1.9 Watershed Rangers

The Watershed Rangers are uniformed and trained primarily to maintain a positive, visual presence in the watershed, to observe the behavior of individuals engaged in activities on watershed lands and waters, and to ensure that such activities occur within the applicable rules through education and interpretive interaction with the public. Watershed Rangers are not responsible for criminal enforcement; when necessary, Rangers involve the State Police.

The Watershed Rangers also are a key element in the Bureau's education and outreach program. Their uniformed and enthusiastic presentations and demeanor work well with young, impressionable audiences both in classroom and on-site educational presentations. The Rangers will help to establish lifelong attitudes of respect and stewardship for the watershed's resources.

The Watershed Rangers' main activities are: patrol, field interpretive programs, and school-based programs. Since the terrorist attacks of 9/11/01, the emphasis of their work has been on patrolling and other security matters. The Watershed Rangers are assigned to one of the watersheds and report to the relevant Superintendent and to the Division Director.

Qualifications and Training

Personnel assigned to the Watershed Rangers come from a wide educational background. The Rangers have participated in intensive training and professional development courses, including:

- Interpretive Training Institute
- Project WET Training
- State Police Academy (Facilitating Communication in Difficult Situations)
- CPR/First Aid
- Search and Rescue
- Hazardous Materials Awareness
- Incident Command Systems
- Reservoir Spill Containment/Boat Operations.

9.1.10 MWRA Participation in Watershed Protection Activities

The MWRA Waterworks Division has played a significant role in watershed management since 1989, when MWRA and MDC hired Rizzo Associates to develop the first protection plans for the Quabbin/Ware and Wachusett watersheds. MWRA staff participate in a review capacity on all major projects. There are three on-going task forces between the two agencies – Reservoir Operations, Watershed Protection Act Working Group, and the Land Acquisition Panel; ad-hoc groups are organized as necessary on other topics of concern.

Shortly after the creation of the MWRA and the MDC Division of Watershed Management in 1985, a Memorandum of Understanding (MOU) was negotiated to establish the individual and shared responsibilities of these two new agencies. The MOU was first revised in 1993 in response to the original Watershed Protection Plans. Another revision is in process at the time of this Plan Update's publication. The MOU will continue to delineate the relationship between the DCR Bureau of Watershed Management and the MWRA.

9.1.11 Use of Consultants

The core staff of BWM is supplemented in expertise and resources by the use of consultants and universities for special assignment or when BWM needs to add specific skills. These consultants, engineers, scientists, and other professionals perform specific studies and/or tasks under contract. Research projects on topics such as forest management, wildlife, and water quality, such as those with the University of Massachusetts at Amherst, improve BWM's knowledge of the watershed system, its ecological processes, and management options. Professional engineering firms are utilized for specific studies and assessments, such as Rizzo Associate's *Hazardous Materials Emergency Response Plan,* SEA's design work on the Innovative/Alternative Septic System Technology Pilot Program, and CDM's *Wachusett Watershed Stormwater Management Plan*.

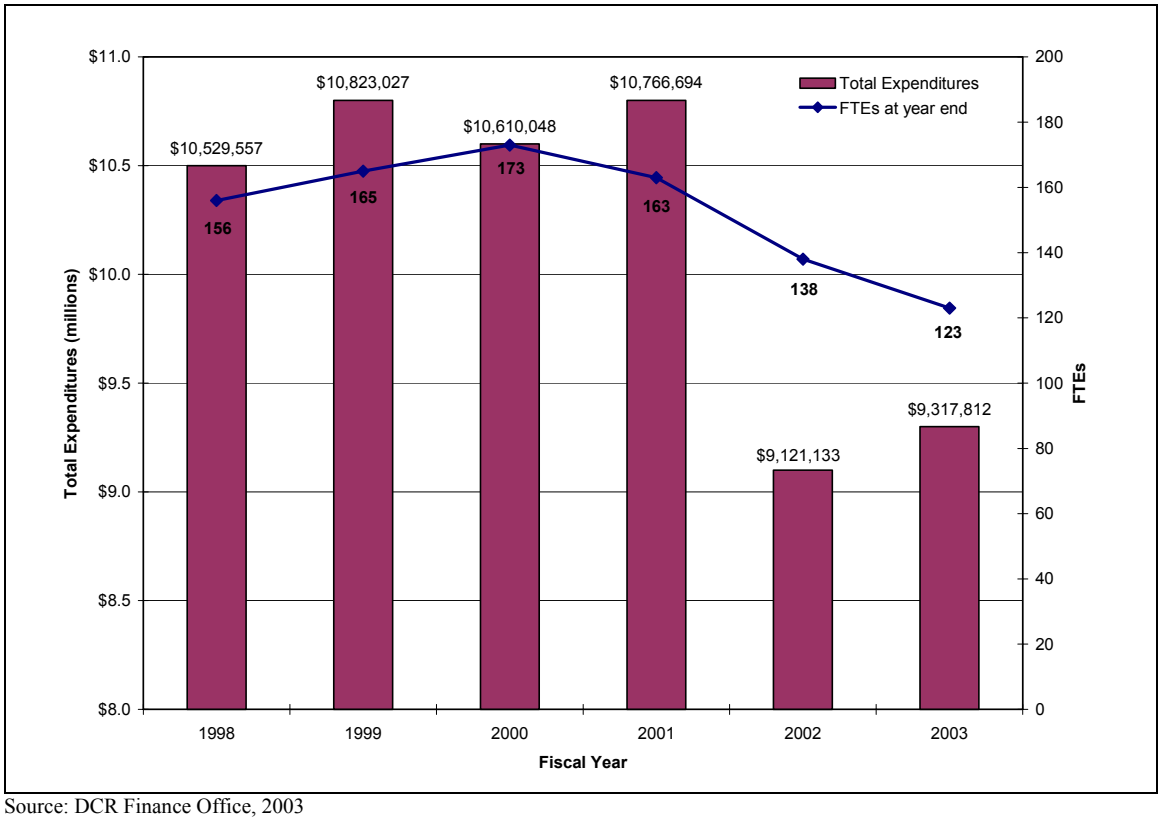
9.2 Budget

The annual operating budget for BWM is appropriated by the legislature as part of the state's annual fiscal budget process. MWRA reimburses the Commonwealth for 100% of the actual operating costs of BWM. MWRA also reimburses the Commonwealth for all debt service on capital projects and land acquisition, and funds the PILOT program to watershed and aqueduct communities. The BWM budget also includes an appropriation, separate from the MWRA cost assessment, for payment of sewage treatment costs to the town of Clinton.

Figure 9-2 shows the annual appropriations and staffing levels (measured in full time equivalents, or FTEs) for fiscal years 1998 through 2003, inclusive. Personnel costs typically account for over 70% of the operations budget. While the 1991 Plan suggested a staffing level of 185 FTEs to accomplish the recommended programs, BWM has managed to accomplish its objectives within the varying staffing levels reflected in Figure 9-2. This has largely been achieved through a continual effort of prioritizing in-house staff responsibilities and use of outside consultant services for specific projects and programs.

In addition, MWRA has several Waterworks Division staff people dedicating significant time to watershed protection planning activities and water quality monitoring. These MWRA efforts are closely coordinated with BWM.

Figure 9-2: BWM Total Expenditures and FTEs (FY1998-FY2004)



Source: DCR Finance Office, 2003

9.3 Five-Year Plan

BWM is committed to the provision of adequate staffing to successfully complete the wide variety of tasks involved in protecting the water supply and providing stewardship over the extensive system of land and water resources under its care and control. BWM's full implementation of the Watershed Protection Plans is directly attributable to the capabilities of its very qualified and dedicated staff.

To meet the needs of this Watershed Protection Plan Update over the next five years, BWM will be requesting approval to fill several vacancies in response to identified priority areas. These priority areas include the Environmental Quality Program in the Wachusett section; the Forestry Program in the Quabbin/Ware River section; and the operations labor forces in both the Wachusett and Quabbin sections.

MWRA and the Department of Conservation and Recreation are presently engaged in the negotiation of an updated Memorandum of Understanding. Important provisions relate to the annual budget planning process, including consideration for staffing levels and associated costs, based principally on the Watershed Protection Plans for both Wachusett and Quabbin Reservoirs. Building upon the current costs associated with personnel, it is projected that the staffing level of the DWM will need to increase to a level between 150 -165 FTE's, and an annual operating budget between $10 and $11 Million.

Table 9-1 presents a five year Action Plan generated from Sections 4 through 8 of this Plan. Unlike the previous Plan, this table does not demarcate an implementation timeline. Instead, each action is prioritized as either "High", "Medium", or "Low." This format provides the Bureau flexibility to achieve the most critical tasks. BWM will utilize the table as the basis for more detailed annual action plans used for both budgeting purposes and regulatory review.

Table 9-1
Wachusett Watershed Protection Plan Action Plan Summary

Task #	Description	Priority	Section
4.1 Land Acquisition Program			
1	Evaluate 1998 Land Acquisition Plan and assess whether it needs modification.	High	NR
2	Acquire control, through both in-fee acquisition and Conservation Restrictions, of highly rated land based on computer modeling and staff expertise.	High	NR
3	Work with EOEA and the Commonwealth Office of Development to partner with other conservation oriented entities to protect land in the Wachusett Reservoir watershed.	High	NR
4	Complete demolition, remediation and restoration of all property requiring such work.	High	NR
4.2.1 Public Access			
5	Continue Watershed Ranger program to improve voluntary compliance with the public access regulations through public education.	High	Rangers
6	Continue enforcement of public access regulations through partnership with the State Police, Environmental Police and local police departments.	High	Rangers
7	Improve key public access entry points in the watershed with signs, interpretive kiosks, appropriate parking facilities and gates.	Medium	Rangers
8	Develop and distribute Public Access Map(s) that show locations for hiking, bicycling, hunting, fishing, and parking.	Low	Rangers/ED
9	Provide public education and interpretive services through direct contact and printed materials.	Medium	NR/ED/ Rangers
10	Foster partnerships with local entities to develop and maintain facilities on BWM land in keeping with BWM policies and regulations.	Low	NR
11	Maintain a regular monitoring program for BWM forest roads, access points and reservoir shorelines.	Medium	Forestry
12	Implement Access Plan recommendations.	High	Super
13	Provide a yearly review of the Wachusett Reservoir Watershed Access Plan and, if necessary, a public meeting to gather input on implementation of the plan.	Low	Super
14	Update the Wachusett Reservoir Watershed Access Plan in 2008.	Medium	Super
4.2.2 Wildlife Control			
15	Continue Bird Harassment Program using all available and appropriate methods.	High	EQ
16	Continue to implement habitat modifications where appropriate.	High	NR

Task #	Description	Priority	Section
17 .	Continue beaver and muskrat control in the Aquatic Wildlife Pathogen Control Zone and when feasible initiate control in rest of reservoir; routinely evaluate the effectiveness of these controls.	High	NR
18	Monitor wildlife populations for presence of protozoa.	Medium	NR
19	Respond to complaints on beaver and beaver impoundments on DCR property impacting private land; provide assistance as time allows.	Medium	NR/EQ
20	Continue to locate all geese nesting on the reservoir and treat eggs to prevent hatching.	High	NR
4.2.3 Land Management			
21	Continue to conduct silviculture activities with the goal of forest diversity.	High	Forestry
22	Continue inspections to ensure compliance with BWM CMP forestry requirements for water quality protection.	Medium	Forestry/ NR
23	Continue to cut the reservoir shoreline on a rotational basis in order to encourage herbaceous and shrub species to dominate the shoreline.	Medium	Forestry/ Super
24	Write management plans for each parcel that the Bureau intends to maintain as a field.	Low	Forestry/NR
25	Identify and provide habitat for rare flora and fauna in order to promote biodiversity and eliminate, and prevent where possible, the spread of non-native invasive species.	Low	Forestry/NR
26	Continue to follow the objectives outlined in the Wachusett 10-year Land Management Plan, including approaches for newly acquired lands, forestry and management of fields and shoreline.	High	Forestry/ NR/Super
27	Inspect BWM property bounds to identify encroachments.	Medium	Forestry/ NR/Rangers
28	Conduct outreach with abutters of BWM lands to inform them of BWM property bounds and allowable uses of BWM lands.	Medium	NR/Super/ Rangers
4.3 Other Protected lands			
29	Perform baseline surveys on all CR purchases.	High	NR
30	Monitor all of the Bureaus CRs.	High	NR
31	Pursue care and control agreements with other state agencies and non-profit land protection organizations.	Low	NR
32	Monitor Chapter 61 properties to encourage more permanent forms of protection.	Low	NR
5.1.1 Watershed Water Quality Monitoring			
33	Continue routine and non-routine water quality sampling and biological monitoring in the watershed.	High	EQ
34	Complete a five-year update to the report by BWM focusing on ten years of fecal coliform bacteria and conductivity data on the Wachusett tributaries, which will further refine BWM's ability in establishing priorities among watershed programs and subbasins.	Medium	EQ
35	Continue use of stream gages to measure stream flow.	High	EQ

Task #	Description	Priority	Section
36	Continue to work with UMass to refine use of alternative source-specific indicators to help discriminate sources of microbial contamination.	Medium	EQ
37	Focus efforts on stormwater sampling to improve understanding of primary external source of reservoir contamination.	High	EQ
5.1.2 Reservoir Water Quality Monitoring			
38	Continue routine and non-routine water quality sampling (including plankton monitoring) in Wachusett Reservoir.	High	EQ
39	Continue macrophyte control efforts to stop the spread of Eurasian Water-milfoil in the reservoir and to reduce the source population in the Stillwater Basin.	High	EQ
40	Complete and utilize water quality model to assist with reservoir operations decisions.	Medium	EQ
41	Continue to coordinate the Reservoir Operations Group.	Medium	Super
5.2.1 Watershed Protection Act			
42	Continue to administer individual applications under the Watershed Protection Act regulations. Review all WsPA applications, respond in a timely manner and track WsPA applications.	High	EQ/Plan
43	Continue to convene the Watershed Protection Act Working Group.	Medium	Plan/EQ
44	Refer development projects not regulated by the WsPA for appropriate review and tracking under other statutory authority by Environmental Quality Section staff.	High	EQ
45	Update parcel information in the GIS database.	Medium	Plan/GIS/EQ
5.2.2 Other Environmental Regulations			
46	Continue to meet, as necessary, with DEP, DAR, EPA and other agencies to enforce compliance with existing environmental regulations.	Low	EQ/Super/ Plan
47	Review DEP Enforcement Protocol.	Medium	EQ/Super/ Plan
48	Continue to monitor cases through EQ and WsPA tracking system.	High	EQ
49	Continue to screen for potential violations through ongoing water quality monitoring, environmental quality assessments, and field surveillance.	High	EQ
5.3 Environmental Quality Assessments			
50	Maintain five-year cycle/rotation for completion of Environmental Quality Assessments.	High	EQ
51	Implement recommendations for completed EQAs.	High	EQ
52	Produce annual status report on all recommendations in past EQAs.	Medium	EQ
6.1.1 Sewers			
53	Complete Final Phases of sewer project in Holden and West Boylston.	High	Sewer

Task #	Description	Priority	Section
54	Track connections to new sewer lines.	High	Sewer
55	Implement Worcester sewer system improvements.	High	Sewer
56	In conjunction with routine water quality monitoring, assess impact of sewers on water quality.	Medium	EQ
57	Assist Rutland and Holden with Infiltration/Inflow (I/I) Reduction Programs.	High	Sewer
58	Evaluate I/I and sewer condition of BWM Rutland-Holden trunk sewer.	High	Sewer
6.1.2 On-Site Treatment			
59	Continue to review routine water quality data for any evidence of potential problems with on-site systems.	High	EQ
60	Review local records, water quality data, and other pertinent information in conducting Environmental Quality Assessments to identify potential problem sites or areas.	High	EQ
61	Provide assistance, as requested, to local boards of health on wastewater disposal issues, such as alternative technologies, septic system O&M, and local and regional management alternatives.	Medium	EQ/Sewer
62	Continue to monitor Alternative/Innovative systems installed in BWM pilot program.	Low	Sewer
63	Utilize Septic Database System to develop statistics based on subbasin, type of system and age, as well as information pertaining to problems, repairs, and Title 5 replacements.	Low	Sewer
6.2 Stormwater Management			
64	Add additional stormwater sampling. Continue work with UMass to collect stormwater samples after hours.	High	EQ
65	Add additional stormwater sampling specific to evaluate BMPs (before and after installation).	Medium	EQ
66	Develop revised list of projects for the 2004 – 2009 timeline that integrates water quality and resource considerations. Install one new BMP each year for next five years.	High	EQ
67	Review MHD Phase II permit and meet to coordinate with appropriate MHD staff.	Medium	EQ
68	Assess research needs relative to stormwater modeling and monitoring.	Medium	EQ
69	Work with MHD specifically on I-190 basin maintenance.	Medium	EQ
70	Work with local towns to assist in implementing the required Phase II Pollution Prevention Plan.	High	EQ
71	Provide technical assistance to towns, as requested, on issues such as stormwater bylaws.	Medium	EQ
72	Complete stormwater mapping for major conveyance structures in the watershed.	High	EQ
6.3.1 Highways and Railroads			
73	Coordinate efforts with State and local highway departments and railroad companies to improve operational and maintenance practices.	Low	EQ
74	Advocate for State and local highway departments to include Best Management Practices (BMPs) into new construction or improvements of existing roads in order to treat or redirect all direct discharges to the reservoir.	Medium	EQ

Task #	Description	Priority	Section
6.3.2 Hazardous Materials Emergency Planning and Response			
75	Refine participants and responsibilities in the Hazardous Materials Emergency Response.	Medium	Super
76	Promote training and equipping of BWM staff and local responders. Coordinate drills and communications to maintain and improve cooperation among State and local responders.	Medium	EQ/Rangers
77	Prepare and maintain plan for BWM property response priorities, and assist communities with update and preparation of their Comprehensive Emergency Response Plans.	Medium	EQ/Rangers
78	Coordinate with active railroad companies on security and freight issues within state and federal guidelines.	Low	Director
6.4.1 Construction (Erosion and Sediment Control)			
79	Continue to review projects through WsPA, working with conservation commissions and other local boards.	High	EQ
80	Monitor active projects through on site inspections and water quality testing.	High	EQ
81	Pursue compliance and enforcement of all appropriate environmental regulations.	Medium	EQ/Super
6.4.2 Agriculture			
82	Monitor agricultural impacts through EQAs; follow policy to contact agricultural land owner if there is a violation of watershed regulations.	High	EQ
83	Update status of sites identified as most important in 1998 Plan. Evaluate effectiveness of installed BMPs.	Low	EQ
84	Identify and locate new hobby farms.	Low	EQ
85	Assess opportunities to educate hobby farm and nursery/landscape operators on water quality issues.	Low	EQ
86	Coordinate with DAR and EOEA to integrate water quality objectives into their agricultural outreach materials.	Low	Plan/EQ/ Super
6.4.3 Private Forestry			
87	Renew the three year contract for private lands stewardship assistance.	Medium	NR
88	Continue to review all forest cutting plans that occur in the watershed.	Medium	Forestry
7.1 BWM Facilities			
89	Complete underwater inspections of Wachusett Dam and Cosgrove Intake Facility; develop necessary repair designs from inspections.	High	Director/CE
90	Proceed with Spillway improvements and North Dike modifications.	Medium	Director/CE
91	Install specialized instrumentation and sensing devices at Bureau dams.	Medium	Director/CE
92	Revise, as necessary, the Emergency Action Plan.	High	Director/CE/ MWRA

Task #	Description	Priority	Section
93	Coordinate with MWRA on future infrastructure maintenance and improvement activities in order to minimize and mitigate any impacts on water quality and water treatment.	Medium	Director/CE/ Super
7.2 Security			
94	Due to the sensitive nature of this matter, specific details are not included.		
8.1 Community Technical Assistance/			
95	Maintain communication with boards of health, conservation commission, planning boards, public works departments and boards of selectmen.	Medium	EQ/Super
96	Provide direct technical assistance support, as requested, to local boards and community organizations.	Low	EQ
97	Administer existing Technical Assistance contracts.	Low	Plan/EQ
98	Implement Technical Assistance Contract Program to strengthen local planning capability.	Low	Plan/EQ
99	Track changes in local bylaws for watershed protection through regular communication with towns and Regional Planning Agencies.	Low	EQ
8.2 Public Education and Community Outreach			
100	Continue to develop, implement, and expand curriculum developed for the Wachusett Regional School District.	Low	ED
101	Continue to manage Project WET and support other state environmental programs including Project WILD, Project Learning Tree and the Envirothon.	Low	ED
102	Continue to offer in-school and field programs to watershed school systems.	Low	Rangers
103	Develop programs and exhibits at Stillwater Farm.	Low	ED
104	Expand use of kiosks and bulletin boards to educate visitors.	Medium	Rangers
105	Prepare outreach materials for the general public and media on DCR and general watershed topics.	Low	Super/ED/ Rangers/NR/P lan
106	Continue to develop website to provide educational resources on watershed management topics.	Low	Plan
107	Continue publication of the Downstream newsletter. Assess topics and distribution process.	Low	NR/Super/ Plan
8.3 Geographic Information Systems			
108	Update digital information, including all new BWM land purchases, Watershed Protection Act maps and parcels, and provide analyses for use in Bureau reports and publications.	High	GIS
109	Continue support to municipalities and non-government organizations by providing GIS products and technical assistance.	Low	GIS

Task #	Description	Priority	Section
110	Continue to update the Wachusett Reservoir Watershed Land Acquisition Model to determine priority land for purchase.	Low	GIS
8.4 Research Projects and Special Studies			
111	Continue to support research projects and special studies by UMass (Indicator Organisms, Watershed Modeling, Watershed Runoff, Reservoir Modeling) and USGS (Stream Gauging)	Medium	EQ
112	Continue to support in-house research projects and special studies, including In-situ Reservoir Water Quality Monitoring, Macroinvertabrate Monitoring, Forest Mapping and Wildlife Studies.	Medium	EQ/NR/ Forestry
113	Review requests by other institutions to participate in investigations of watershed issues.	Low	Super/EQ/ NR

KEY:

CE: Bureau Civil Engineering Section
Director: Division Director
ED: Bureau Education Section
EQ: Wachusett Environmental Quality Section
Forestry: Wachusett Forestry Section
NR: Bureau Natural Resources Section
Plan: Bureau Planning Section
Rangers: Wachusett Watershed Rangers
Sewer: Bureau Sewer Section
Super: Wachusett Superintendent

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